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remove their bark-cloth bands, take to the water and swim over, holding spear, shield, string bag, and bark-cloth band above their heads. A man may take a short length of light wood for a lifebuoy and, launching himself into the rapids of the Kumusi, will disappear and reappear many times, in a way which may actually alarm the spectator, until he emerges on the opposite bank some hundreds of yards down stream.

Rafts. Along the upper reaches of the rivers canoes are seldom seen. A primitive raft (*enga*) is constructed of half a dozen logs with two cross-pieces. Underneath are placed one or two much larger logs, which, though quite unattached, remain in position and buoy the raft upwards. An even cruder makeshift is an *enga* of banana stalks.

This primitive device, the raft, continues to hold its place with the canoe. Although essentially temporary it is strongly made. There is a tale of a crocodile-man who in his human guise persuaded two youths to build a raft, instructing them particularly to use grass in the building of it. He then volunteered to swim underneath in order to buoy up the raft like one of the detached logs. But he had betrayed himself by a smile which revealed the long pointed teeth of a crocodile, and the boys, unknown to him, used cane and strong creeper in binding the logs together. Then follows the sequel in which the swimmer, transmogrified into a crocodile, heaves and lashes his tail to no effect, thus pointing to the necessity of making a strong job even of an *enga*. But, however well constructed, the raft remains an unstable craft, and in the main a temporary one. Being clumsy and unmanageable, it may be carried far down stream in transit, and it is easier to make another than to haul it back.

Canoes. The canoe (*wa*) is a hollowed log with a platform and an outrigger. The work of obtaining a suitable log and the rough hewing of it will call for the assistance of a man's fellow villagers, for which he makes them no reward except that of feeding them. After the initial stages he works leisurely at it himself; he gives a neat finish to the hewing with his adze (and sometimes still the old stone adze is preferred for canoe work); he fits the platform and outrigger;

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and finally paints the dugout a dull red with ochre or clay, possibly picking out a zigzag in black at prow and stern. The craft is launched with no ceremony save a 'trial spin', and may or may not be given a personal name.

The general appearance of the canoe may be judged from

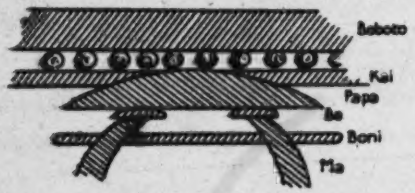

FIG. 14. Attachment of Platform to Hull of Canoe.

the accompanying sketch. The parts are named as follows:

Dugout	*ma*.
Platform	*ma-bau*.
Outrigger float	*tauna* (from its resemblance to the banana *tauna*).
Outrigger poles	*ma-ta*.
Outrigger pegs	*ma-gi* (because made of spear-wood, *gi*).
Prow	*Koparu* (head).
Stern	*Ao*.
Points at stem and prow	*pepe* (the same word is used for sago thorns).
Incised zigzags at prow and stern	*dingaro* (ear).

Between the platform and the hull the method of attachment is somewhat complicated. Along the two rims of the canoe are laid split rails or slats (*be*), their upper surface being rounded (which incidentally provides a moderately comfortable seat for the paddler who sits with one buttock on either rim and his feet in the dugout). The actual supports for the platform are two curiously shaped pieces of wood (*papa*), one at either end, which are laid transversely on the *be*, and thus intervene between the platform and the hull of the canoe. These two *papa* are slightly hollowed on the upper side so as to form troughs in which rest the two transverse rails (*kai*) that form the basis of the platform. The platform is made fast to the hull by lashing firmly to

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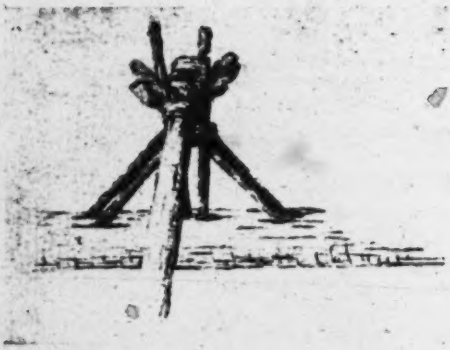

(*a*) Attachment of Outrigger to Pole

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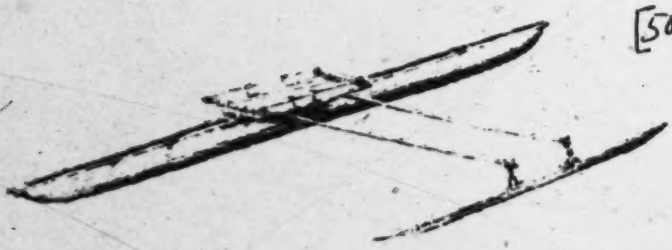

(*b*) Canoe. Up to 40 feet long

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(*c*) Tavo or Coco-nut Mat [facing p. 74]

PLATE XV

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stout pieces of palm-wood (*boni*), one at either end, which pass through the wood of the hull. The purpose of the *papa* is no doubt to allow for a little give, i.e. to prevent undue rigidity between the hull and the platform. The actual floor of the latter is composed of light longitudinal

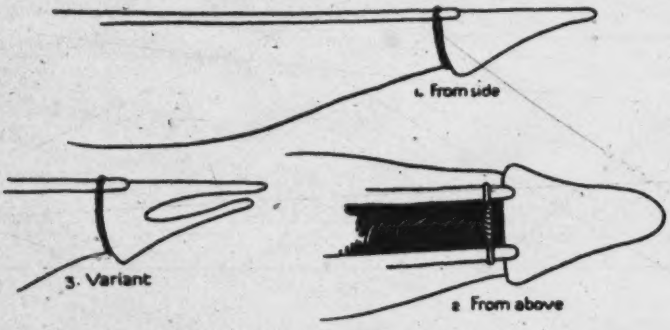

FIG. 15. Canoe Prows.

rails, and at either end of it is bound on a piece of wood constituting a low bulwark (*boboto*).

The outrigger poles are attached to the actual outrigger by pegs or 'spears' (*gi*) of black palm-wood, which are commonly six in number and arranged in the manner shown. They are simply driven into the wood of the outrigger.

The prow and stern are roughly the same. The usual forms are illustrated, together with an unusual variant seen on the Mambare.

The canoe varies considerably in size,[1] the largest being found on the coast and used for seafaring. While well adapted to rough water and open rivers, the outrigger canoe will not compare with the plain dugout of the Delta country for speed and for handiness among intricate watercourses.

[1] I am indebted to Mr. Leo Austen, Assistant Resident Magistrate, Buna, for the following measurements of a canoe from near Gona:

Length of hull	39 ft. 8 ins.
Depth of hull	1 „ 10 „
Length of platform	8 „ 6 „
Breadth of platform	6 „ 9 „
Length of outrigger	18 „ 1 „

The two outrigger poles were of slightly different length, 18 and 19 ft. respectively, measured from the inner edge of the platform.